

EPA-PNL-2177

Palmer Hough/DC/USEPA/US

12/21/2011 04:54 PM

To Jeff Frithsen

cc Richard Parkin, Sheila Eckman, Glenn Suter, North.phil

bcc

Subject Re: Fw: Greenwire article on Pebble

I found this statement from the article below very interesting. So what experts are saying this and how many populations is a "few"?

-Palmer

"But experts say salmon are highly dependent on genetic diversity for survival and would suffer from the loss of even a few spawning populations."

Palmer Hough, Environmental Scientist
tel: 202.566.1374 | fax: 202.566.1375

Wetlands Division
U.S. EPA Headquarters (MC 4502T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
www.epa.gov/wetlands

Jeff Frithsen

[FYI.... Hi - this interesting \(and lengthy\) piece sh...](#)

12/21/2011 02:32:23 PM

From: Jeff Frithsen/DC/USEPA/US
To: Palmer Hough/DC/USEPA/US@EPA, Richard Parkin/R10/USEPA/US@EPA, Sheila Eckman/R10/USEPA/US@EPA
Date: 12/21/2011 02:32 PM
Subject: Fw: Greenwire article on Pebble

FYI....

Hi – this interesting (and lengthy) piece showed up in today's Greenwire. This is part 1 of 2; tomorrow's Greenwire will have the 2nd installment.

SALMON: Battle for Bristol Bay, a resource struggle for the ages

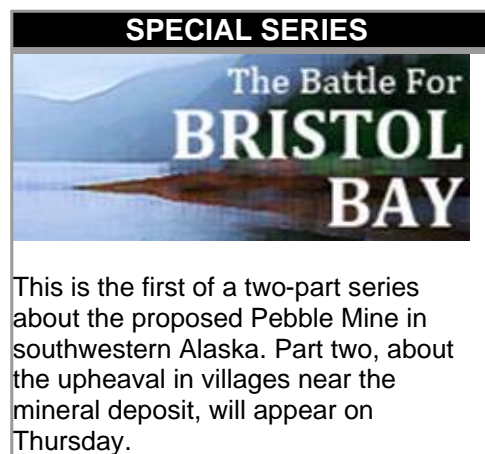
Gabriel Nelson, E&E reporter

Published: Wednesday, December 21, 2011

DILLINGHAM, Alaska -- On a chilly day in late September, fishing boats were docked by the dozens in this remote town on Bristol Bay. Come wintertime, many would rest on blocks in people's yards.

The boats sit waiting for the rush of the summertime, when Dillingham's population of 2,300 will double. Fishermen come from across the region to make their living, just like the settlers who flooded Alaska just over a century ago in search of gold and the salmon that earned the nickname "money fish."

The salmon catch still sustains these towns, but today they face a new test. Because of a plan to dig a massive copper, gold and molybdenum mine in the headwaters of Bristol Bay, people here are grappling with a question they would rather not ask: Can southwest Alaska make money from its wealth of minerals without doing harm to the money fish?



Even as wild salmon populations have dwindled elsewhere, southwest Alaska's fishing industry has stayed strong since the first canneries were built in the late 19th century.

Year after year, fishermen harvest almost 70 percent of the salmon, but the ones that make it past the nets are still enough to replenish the population, said Rick Parkin, a 30-year veteran of U.S. EPA who has spent the past 10 months leading a study of the Bristol Bay watershed.

"I'd like to have my stock portfolio do that," Parkin said in a phone interview this fall from his Seattle office.

Fishermen and village leaders in southwest Alaska have asked EPA to study the risk posed by projects such as the planned Pebble mine, a joint venture of British mining giant Anglo American PLC and Vancouver, Canada-based Northern Dynasty Minerals Ltd. The deposit's exact value is unknown, but with an estimated 80.6 billion pounds of copper, 5.6 billion pounds of molybdenum and 107.4 million ounces of gold, it would produce hundreds of billions of dollars' worth of minerals at current prices.

Whether the government should approve the mine is one of the most heated political debates in Alaska, a place usually known for its pro-development mindset. The project has raised tough questions that are being asked in many corners of the world, as people struggle to grow new industries and meet rising demand for resources without harming the richest ecosystems on Earth.

Salmon fishing boats set off from fishing towns like Dillingham for about five weeks per year, from the end of June until the last week of July, and cast their nets near the mouths of the Kvichak and Nushagak rivers. These are the two main portals to a vast expanse of lakes and streams that probably hold the world's most active spawning grounds. (Russia's Kamchatka region has some impressive runs too, salmon experts say, though the numbers that come out of Siberia aren't as reliable.)

From canning records dating back to 1893 and a meticulous fish-counting census that has taken place in southwestern Alaska every year since 1956, scientists know that an average of 33.3 million salmon start a spawning pilgrimage each year in Bristol Bay, on the north side of where the Alaska Peninsula juts into the Pacific Ocean.

A few Alaskan salmon stocks were exhausted by the early canneries, because people dammed the rivers and blocked salmon on their way to spawn. Not so with the mighty rivers that ended at Bristol Bay, which were too strong and wide to be barricaded.

"Of the plants at Bristol Bay and other northern points," federal fisheries inspector George Tingle reported to the U.S. Treasury in 1896 after a visit to Alaska, "it may be said that they require less inspection and surveillance than others, for the reason that the natural conditions are such that it is well-nigh impossible to exhaust the streams."



Lydia Olympic, a Yup'ik Eskimo who has worked to block the proposed Pebble mine as a tribal advocate for the Wilderness Society, hangs fish in her hometown of Igiugig. Many people from the town on the Kvichak River fish for subsistence, and some make their living by catching salmon as they migrate to spawning grounds closer to the mineral deposit. Photo courtesy of Ben Knight/[Flickr](#).

Bristol Bay now produces half the world's harvest of sockeye, a salmon variety with fatty, bright-red flesh that is prized by chefs and sport fishermen, and which comprises the biggest share of the region's \$300-million-a-year commercial fishing business.

Commercial fishermen catch other fish in Bristol Bay and farther out in the Bering Sea, but none are as valuable as sockeye.

Carol Ann Woody, a fisheries biologist who spent the past several years surveying the region's salmon populations for the Nature Conservancy, said the vast undeveloped expanses of southwest Alaska are the main reason the salmon have continued to thrive as

wild salmon have dwindled elsewhere.

Across the United States, she said during an interview in Anchorage, about one-third of historic wild salmon stocks are extinct and 40 percent are endangered, mainly because of human interference with their habitat.

"It's happened in Europe, the East Coast, and now it's marching up the West Coast," said Woody, a veteran of the U.S. Geological Survey and the U.S. Forest Service who now runs her own research and consulting firm. "Alaska has the last of the best."

Above the Pebble deposit, which is about 120 miles northeast of Bristol Bay and 200 miles southwest of Anchorage, is a salmon spawning stream known as Upper Talarik Creek. The creek winds its way about 20 miles to Lake Iliamna, the largest sockeye spawning site in the world, which can be seen in the saddle of two small mountains from the mine site.

There are no roads and no permanent structures in sight -- just a vast, water-flecked plain, ringed by rolling mountains. The land is dotted with wild blueberry bushes and exploration drilling pads that are served by helicopter alone.

"If things don't work out, it'll be as if they were never there," promised Nance Larsen, a company spokeswoman, as she stood on a windy hill overlooking the drills.

But if things do work out, the hill will soon overlook an open pit perhaps 2 miles wide.

Like the Arctic National Wildlife Refuge, a wilderness on the North Slope of Alaska that holds enough oil to meet perhaps 2 percent of Americans' demand, Bristol Bay is becoming a place that people argue about from halfway around the world. Locals are similarly conflicted, knowing that the Pebble project

could decide the future of their region.

June Tracey, who runs a bed and breakfast in the nearby town of Nondalton, told *Greenwire* she is worried that the mine could harm the pristine land around her home. Though they are more than 100 miles from Bristol Bay, Nondalton and other towns near the mineral deposit are home to people who work for the fishing industry and catch the plentiful salmon for their own use.

The last thing Tracey wants to see is "a big old hole in our backyard," but younger people might see it differently, she said.

They have been raised with television, electricity and cellphones, not to mention the other technologies that have come to Bristol Bay along with what Tracey called "Western ways." She smiled at the phrase, perhaps because you can't go too far west from this corner of Alaska without leaving North America.

"I may not see it when they first break that ground there. I'm a mom, I'm a grandma and I'm a great-grandma," Tracey said. "But this is for the future of our younger generations."

The Pebble Partnership, a joint venture between Anglo American and Northern Dynasty Minerals, vows that it will do everything in its power to protect the environment.



Many people in sparsely populated southwestern Alaska oppose the proposed Pebble Mine because of worries that development would harm Bristol Bay's wild salmon, which spawn across an area the size of Maryland and New Jersey combined. Map data courtesy of OpenStreetMap.

Yet many commercial fishermen and locals who fish for sustenance are skeptical that the project can be done without a grave risk to the salmon. U.S. EPA has agreed to study that question, saying that officials will use Parkin's watershed assessment to decide whether to block a key permit for the project.

Pebble has enlisted 500 scientists, spent \$120 million on research of its own and is close to releasing a 25,000-page baseline environmental assessment with an eye toward applying for permits around the end of 2012. It is the largest research project ever done for a mining project, Pebble CEO and former Alaska Department of Natural Resources Commissioner John Shively said in October at a conference organized by the American Association for the Advancement of Science.

"If you look at the sensitivity of the project, if you look at where we are, it was absolutely required that we do this," Shively told the people gathered in the gymnasium of Dillingham's combined middle and high school, the home of the Wolverines. "This is something that we didn't do just to impress people."

Alaskans conflicted

It was early fall, and state accountants had just sent out the annual checks from the Alaska Permanent Fund, which gives every man, woman and child a share of the state's oil revenues. Retailers in Alaska's metropolis of Anchorage took to the airwaves to convince people to spend their \$1,174 windfall on an all-terrain vehicle, airline tickets or the down payment on a car.

As they waited for their share of the wealth, Alaskans could also flick on the television or the radio and hear the latest round of dueling advertisements on mining in Bristol Bay.

"One pebble," one recent television spot opposing the mine begins, as a stone falls slowly into a pool of water, "and 'boom.'" The familiar mushroom cloud of a nuclear blast fills the screen. "In Bristol Bay," the advertisement finishes, "why would we even contemplate such craziness?"

A similar advertisement about oil drilling in ANWR probably wouldn't get much traction. Most polls show the U.S. population is evenly split on drilling in the wildlife refuge, with Republicans mostly in favor and Democrats mostly opposed, but polls in Alaska show that support hovers around 80 percent.

Pebble has Alaskans much more divided.

It has been decades since a sitting governor, senator or congressman from Alaska has opposed drilling in ANWR, but over the past few years, the Pebble project has been opposed by prominent Alaska politicians such as the late Sen. Ted Stevens (R), former Gov. Tony Knowles (D) and former Gov. Jay Hammond (R). Current elected officials have generally treaded lightly on the issue or made it into an issue of states' rights, saying they want to let the project move through the permitting process so Alaska regulators can decide if the risks to the environment outweigh the value of extracting the minerals.

"Any effort by the [EPA] to block responsible development before a project has even been proposed would be unprecedented and would have a chilling effect on the state's economy," Sen. Lisa Murkowski (R-Alaska) said this summer ([Greenwire](#) , July 21).

The man behind most of the anti-Pebble advertisements is Art Hackney, an Anchorage-based political consultant who had spent most of his career campaigning and making advertisements for Republicans. On his office walls, signed photographs show the smiling faces of Sen. Stevens, Rep. Don Young (R-Alaska) and former President George W. Bush.

During an interview, Hackney pointed to the photographs on his wall and insisted that Pebble is not a "greenie" issue. "You can be anti-Pebble and still be pro-development," he insisted.

His client this time is the billionaire Republican investor Bob Gillam, who has spent millions of dollars trying to block the mine. He has often mentioned his support for ANWR to show he is not against development of Alaska's resources.

"Our position is 'ANWR, yes -- Pebble, no,'" Hackney said.

Another of the project's most vocal critics is Rick Halford, a former president of the Alaska State Senate who lives near the fishing hub of Dillingham. He is a classic establishment Republican -- in her autobiography, "Going Rogue," the 2008 Republican vice presidential candidate Sarah Palin says it was Halford who first urged her to run for Alaska governor.

Halford is a pilot, and for years, he would fly near the site of the Pebble deposit to show off wildlife to his passengers.

One of Alaska's largest caribou populations, known as the Mulchatna herd, has historically moved

through the valley that contains the Pebble deposit. Halford would fly low over the snow-capped peaks nearby, which is where passengers could see caribou lying down in the snow to get away from the insects at lower altitudes.

He hadn't thought much about the project until Gov. Hammond's widow, Bella Hammond, asked him to look into the project.

Halford was always a staunch supporter of developing Alaska's rich resources, and he still thinks ANWR should not be closed to drilling, but he soon became convinced there is nothing Pebble can do to protect the fish in the Bristol Bay watershed.

"It's like the high school kid who says: 'We can do this, and you won't get pregnant,'" Halford said. "It's the lie of all of history -- that you can have both. That you can have it all."

These days, Halford has made fighting the mine into his life's work, though his wife wishes he would spend more time at home.

Halford could have retired to a career as a high-paid lobbyist after leaving the Alaska Senate, he said. Instead, he flies researchers around, landing on lakes near the site of the Pebble deposit so they can study the local ecosystem, and guesses what the mining company is planning to do by studying the layout of its exploration sites.

"My friends would say, 'You finally found a mine you don't like,'" Halford said into a headset as he flew his turbocharged floatplane through a series of banked turns to point out Pebble's network of drilling rigs. "Well, I guess I did."

The latest campaign

Gillam has allied himself with advocacy groups such as Trout Unlimited and Earthworks that have actively fought Pebble for years now. Those groups have lined up a star-studded roster of opponents that includes celebrity chefs and Hollywood icons, including the actor and environmental activist Robert Redford.

Alaska's wild fish have long been a potent symbol for environmental groups, said Mark Van Putten, a former president of the National Wildlife Federation who is now a consultant on conservation policy.

"Salmon is something a lot of people can relate to, because they eat it," Van Putten said. "People are a little more sophisticated about salmon than they are with some of the other fish species."

He remembers when the National Wildlife Federation worked to raise the profile of Copper River salmon among chefs, hoping to rally support for a campaign to protect that area of Alaska from development. In this case, he said, Pebble presents an obvious coalition of the sort that would be needed to block the project, because the mine could butt up against the commercial interests of anglers, commercial fishermen and subsistence fishermen.

Groups fighting the mine have also assembled jewelers -- including Zale Corp., Tiffany & Co. and Helzberg Diamonds -- that have promised not to buy gold that comes from Pebble.

"We have no doubt that they would do everything possible to develop that mine as responsibly as they possibly can. And I'm going to presume that the state of Alaska will do everything possible to make certain that happens if the mine goes forward," said Michael Kowalski, the CEO of Tiffany & Co., in an interview published this month on Natural Resources Defense Council's OnEarth blog. "That said, we have reached the conclusion ... that the risk is simply too great. Despite the best of intentions, the location of this mine is so inherently problematic that it is simply not worth the risk of a catastrophic event."

Pebble has spent millions of dollars on advertising buys of its own over the past several years, hoping to counter what it has described as misinformation about the project.

The company's project has drawn more attention beyond Alaska since EPA got involved, but it was already a cause célèbre several years ago, when Jason Brune, the executive director of a pro-mining advocacy group in Alaska, told the *Anchorage Daily News* that "people see Pebble as the next ANWR."

"ANWR was a polarizing project that was being used as a rallying point for the environmental community, and Pebble was similarly being used," said Brune, who is now a government relations manager at Anglo American, in a recent interview. "It was true then and even more so today."

Gillam bought an airplane for the most recent campaign, which was held in the Lake and Peninsula Borough that surrounds the mineral deposit. In the run-up to the election, the plane did nothing but fly from town to town. Campaign staffers would hop off in places such as Kokhanok, population 146, and walk door-to-door, registering voters and swaying them on Pebble.

The campaign cost Gillam several hundred thousand dollars. That would not be much for a statewide race, but consider this: In the previous borough election, 384 votes were cast. The initiative this fall passed, 280-246.



Bud Verzier, a 30-year-old Idaho native who has worked for Pebble since 2006, took a break this fall from rerouting a drill that veered off course about 3,000 feet underground and brought back the wrong type of rock sample. There are few roads in this remote area of Alaska, so employees have to be shuttled to the deposit by helicopter. "It's just like taking a taxi or driving to work," Verzier said. Photo by Gabriel Nelson.

When all was said and done, the "Save Our Salmon" initiative and the competing "Defend Your Rights" campaign had received at least \$790,000 combined, disclosure records showed -- \$1,500 for every vote cast.

By comparison, the 2008 U.S. presidential election, which cost a record \$1.8 billion and led to talk of runaway spending on political races, broke down to \$14 per voter.

In high demand

The oil beneath ANWR has been locked away since the Jimmy Carter administration, when the decision to create the wildlife refuge had people in Fairbanks burning the president in effigy.

Carter did some soul-searching not too long ago during a visit to the refuge he created. While in Alaska, the avid fisherman also visited Bristol Bay and caught grayling, arctic char and salmon. Most proudly, using a fly that he tied himself, Carter landed a 12-pound rainbow trout on the Copper River near where it drains into Iliamna Lake.

Reflecting on ANWR during a speech last January at the U.S. Fish and Wildlife Service's National Conservation Training Center in Shepherdstown, W.Va., he quoted the Wilderness Society's former president, Olaus Murie, who spent decades campaigning for the creation of the refuge and famously described it as "a little portion of our planet

left alone."

"I hope it can stay that way," Carter said.

That won't happen without a fight. With each new Congress, and each new administration since Ronald Reagan's, oil companies and Alaska lawmakers have tried again to allow for drilling on the refuge's coastal plain.

The calls for drilling in ANWR, which have so far been fended off by environmentalists and their Democratic allies in Congress, get louder every time gasoline prices rise.

There is no reason to think Bristol Bay will be any different. The developers have sometimes been heckled when they have come to fishing towns such as Dillingham, but the allure of the minerals in the ground is strong -- and getting stronger.

Gold is trading at more than \$1,300 an ounce, mainly because it is seen as a safe investment at a time of economic turmoil, but also because the amount of new gold pulled from the ground has dropped by 10 percent over the last decade. Precious metals are becoming harder to find and more expensive to extract as miners go after the most profitable deposits.

Copper and molybdenum are starting to arouse that kind of attention because of their use in electronics and high-tech products favored by environmentalists, as the mine's supporters like to point out. Making an ordinary car takes about 50 pounds of copper, but battery-powered electric vehicles such as the Chevy Volt and the Nissan Leaf need about three times as much. It can take four tons of copper to build a one-megawatt solar panel or wind turbine.

"Our demand for the resources that come from these projects is not going away," said Anglo American's Brune. "We have a choice: Do we develop the resources here in Alaska, or do we develop them in other parts of the world that don't have the same environmental oversight? To me, it's obvious -- you do it here."

Without large new sources of copper, prices will skyrocket, analysts at Vancouver-based Oren Inc. said this February in a typical memo to investors. That would eventually hit the average consumer in the pocketbook, making large deposits like Pebble too valuable to ignore, the company said.

"We fail to see how the small junior projects, which we do love, can produce enough supply to keep up with demand," the memo said. "We're through with the Lindsay Lohans; we're going to need Julia Roberts-style, expensive, ultra-deep mines. They're deposits everyone will want to drill."

Several of the mine's local critics said they are trying to remain hopeful about the years ahead, even if stopping Pebble today might only be buying them some time. Rick Delkittie Sr., a 55-year-old Nondalton native who has been a plaintiff in lawsuits to block the Pebble mine, said this fall's ballot initiative would do the trick, though it has been challenged in court.

"I think we're going to stop them," he said.

'Broader than just Pebble'

The deposit is only one of more than a half-dozen active mining claims in an 800-square-mile parcel of state land zoned for mining. By all indications, more riches are yet to be found.

Other mineral deposits are not as far along in the development process as Pebble, reflecting the huge cost of getting started in the remote wilderness of southwest Alaska. But the surrounding area could become a full-fledged mining district if the Pebble mine builds the needed infrastructure, said Jason Metrokin, the president of the influential Bristol Bay Native Corp.

Bringing the minerals from the Pebble deposit to market would require a power plant, a port facility and more than 100 miles of roads and pipelines, employing a staggering 2,000 workers in a borough of 8,000 people that would be the second-most sparsely populated county in the United States.

Because the Pebble deposit is on state land, the Alaska Department of Natural Resources is the main permitting authority, but the federal government also has control over a number of permits. Dennis McLerran, the administrator of EPA's Seattle-based Region 10 office, said in an interview that the agency won't decide whether to intervene until next summer at the earliest.

"Some of the other mining claims may be similar in scale. From our point of view, it is broader than just Pebble," McLerran said.

Metrokin's company, a congressionally chartered native corporation with annual revenue of \$1.7 billion, publicly came out against the Pebble project in 2009 after taking a neutral stance for years. Despite the chance of competing for lucrative contracts from Pebble, BBNC decided that the project's size, type and location are particularly ill-suited to coexist with the region's fishery, he said during an interview at the company's Anchorage headquarters.

BBNC got out of the fish-processing business years ago. The company now focuses on construction and fuel services. But many of its shareholders are commercial fishermen; a survey released this fall showed that 81 percent of them oppose Pebble. On the floor of his building's lobby was the company logo: a salmon.

Leaks and accidents are almost inevitable with a project so large, Metrokin said, and "if there were to be a failure or a spill, what could that do to the demand for Bristol Bay salmon?"

Groups closer to the fishing industry have also turned their backs on Pebble.

The Pacific Seafood Processors Association (PSPA), a trade group with offices in Seattle, Juneau, Alaska, and McLean, Va., came out last month against the project, changing course from the group's previous stance that Pebble should be allowed to work toward its permits. PSPA had never before taken a stand against a specific development project, and "doing so now is not a decision our association takes lightly," the group wrote.

Offshore drilling also poses a risk. President Obama decided last year under pressure from fishermen and conservationists to leave Bristol Bay out of a federal offshore drilling plan that runs through 2017. In what was seen as a compromise, he allowed oil companies such as Royal Dutch Shell PLC and ConocoPhillips Corp. to drill in the Arctic Ocean, off Alaska's North Slope.

Pebble would need dozens of permits to start construction, including a dredge-and-fill permit from the U.S. Army Corps of Engineers to comply with the Clean Water Act. If it so chooses, EPA could veto the permit.

The company's supporters say a single mine, no matter how large, could not possibly devastate a fishery relying on a watershed that stretches across an area the size of Maryland and New Jersey combined. But experts say salmon are highly dependent on genetic diversity for survival and would suffer from the loss of even a few spawning populations.

"The emerging understanding of biodiversity has really undercut our confidence that we can have our copper and molybdenum and eat our salmon, too," Van Putten said.

Debate moves to Capitol Hill

EPA scientists studying Bristol Bay are mainly based in Seattle, but their work has unleashed a wave of

lobbying on Capitol Hill and turned Pebble into the subject of a national political debate.

Earlier this year, Anglo American CEO Cynthia Carroll met with EPA Administrator Lisa Jackson, who was also booked to speak about her agency's study at an anti-Pebble reception hosted by Sandra Day O'Connor, the former Supreme Court justice. That same week, dozens of chefs gathered at an upscale Washington, D.C., restaurant to serve Alaskan salmon and decry the mining project.

Shively, the CEO of the Pebble Partnership, was in Washington, D.C., at the same time. One of his stops was at the Heritage Foundation, a conservative think tank, where he gave a speech that was provocatively titled: "United States of America: A Second-World Country?"

He argued that the United States is being sapped of its economic vitality because it has become so difficult to extract resources. The Red Dog mine in remote northwest Alaska, which is responsible for 80 percent of U.S. zinc production and 5 percent of the world's supply, has a water pollution permit that requires water pumped into nearby streams to be cleaner than mineral water, which naturally contains trace amounts of metals and salts, Shively said.

At that point, he picked up a trash can, and into it, he poured a full bottle of imported Perrier water that was waiting for him at the podium. It was a prop he had used before during speeches in Alaska.

"The reason I'm doing this job is because I think if we can do it well, we'll change people's lives, and we'll change it for the better," Shively told the audience. "I don't want to do a project that kills all the fish and changes our lives for the worse. That's not my goal."

His speech resonated with Joe Reddan, a legislative affairs specialist at the U.S. Forest Service, who mourned the way Americans today think about natural resources. "I think we've met the enemy, and it is us," he told Shively during the event, paraphrasing the comic strip "Pogo."

That line was made famous by "Pogo" cartoonist Walt Kelly on a poster promoting the first Earth Day in 1970. It bore an image of the strip's main character standing in a swamp filled with trash, turning his face to the viewer with a look of despair.

Kelly meant people were consuming with reckless abandon and in the process had started taking the environment for granted. Reddan, a veteran forest ranger with an agency pin on his lapel, meant that the pendulum has swung too far the opposite way.

"Now, people think wood comes from Home Depot, and water comes from the faucet," Reddan said.